



U.S. Department
of Transportation
**Research and
Special Programs
Administration**

AUG 16 2000

400 Seventh St., S.W.
Washington, D.C. 20590

DOT-E 12118
(SECOND REVISION)

EXPIRATION DATE: July 31, 2002

(FOR RENEWAL, SEE 49 CFR § 107.109)

1. GRANTEE: Taylor-Wharton Gas Equipment
Division of Harsco Corporation
Theodore, Alabama
2. PURPOSE AND LIMITATION:
 - a. This exemption authorizes the manufacture, marking, sale and use of non-DOT specification cryogenic gas system (LASER PACK) consisting of DOT Specification 4L cylinders and non-DOT specification pressure vessels for the transportation in commerce of the materials authorized by this exemption. This exemption provides no relief from the Hazardous Materials Regulations (HMR) other than as specifically stated herein.
 - b. The safety analyses performed in development of this exemption only considered the hazards and risks associated with transportation in commerce.
3. REGULATORY SYSTEM AFFECTED: 49 CFR Parts 106, 107 and 171-180.
4. REGULATIONS FROM WHICH EXEMPTED: 49 CFR § 173.301(d) in that cylinders containing cryogenic gases are not authorized to be manifolded; § 173.316(c) in that the non-DOT specification pressure vessels are not authorized packagings; § 173.316(c)(2) in that cylinders are not filled individually and § 177.834(h) in that discharge of containers is not authorized while attached to a motor vehicle.
5. BASIS: This exemption is based on the application of Taylor-Wharton Gas Equipment dated July 2, 2000, submitted in accordance with § 107.109.

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6. HAZARDOUS MATERIALS (49 CFR § 172.101):

Proper Shipping Name/ Hazardous Materials Description	Hazard Class/ Division	Identi- fication Number	Packing Group
Argon, refrigerated liquid	2.2	UN1951	N/A
Nitrogen, refrigerated liquid	2.2	UN1977	N/A
Oxygen, refrigerated liquid	2.2	UN1073	N/A

7. SAFETY CONTROL MEASURES:

a. PACKAGING - Packaging prescribed is a cryogenic gas system (LASER PACK) that is welded in an upright position to the floor of a handling skid using mounting rings, clips, and/or brackets. Each LASER PACK must conform to the designs shown on Drawings LP55-9C01, Rev. A; LP55-9C00, Rev. A; or LP55-9C03 on file with the Office of Hazardous Materials Exemptions and Approvals (OHMEA). The LASER PACK components must be as follows:

1. Two ASTM A-240 stainless steel vacuum insulated DOT Specification 4L (49 CFR 178.57) cylinders with a maximum service pressure of 412 psig and a maximum liquid capacity of 205 liters. Each cylinder must conform to Drawing VP55-0C01, VP55-0C02, BT55-0C01, or BT55-0C02 on file with OHMEA. Each cylinder is equipped with a pressure relief valve set at 500 psig and a frangible rupture disc set at 750 psig, in conformance with § 173.34(d). In addition, each cylinder is equipped with a 22 psig pressure relief valve that limits the pressure during transportation.

2. One, two, or four vaporizer assemblies constructed of 6063-T6 aluminum, and consisting of one to five finned tubes per assembly. The vaporizer assemblies are designed with a 4 to 1 safety factor and a maximum allowable working pressure of 660 psig. The vaporizer assemblies must conform to Drawing LP55-9C34, LP55-9C30, LP55-9C36, or LP55-9C38 on file with the OHMEA. Each vaporizer

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or LP55-9C38 on file with the OHMEA. Each vaporizer assembly is equipped with a pressure relief valve set at 500 psig.

3. The welded steel handling skid(s) must be in conformance with drawings on file with the OHMEA. The skid(s) must be secured to the motor vehicle in accordance with 49 CFR Parts 393.100 - 393.106.

4. LASER PACKS may not be transported in closed transport vehicles.

b. OPERATIONAL CONTROLS -

1. Each DOT Specification 4L cylinder must meet the filling density requirements of § 173.316(c) (2).

2. The two DOT 4L cylinders are manifolded and held together by structurally adequate means. The cylinders are authorized to be filled simultaneously. Each cylinder must be equipped with an individual shutoff valve that must be tightly closed while in transit. Manifold branch lines of shutoff valves and all interconnecting cylinder and vaporizer lines must be of flexible design with braided metal exterior sheathing. A temperature measuring device may be inserted in one cylinder of the manifold installation in place of the shutoff valve.

3. The contents of the cryogenic gas system are authorized to be loaded or unloaded without removal from the motor vehicle, provided the gas system is attended at all times during loading and unloading operations by a qualified person. For the purposes of this requirement, the terms "attended" and "qualified" must have the meanings described in §§ 177.834(i) (3) and (4) respectively. The person who is responsible for loading the gas system is also responsible for ensuring that it is so attended.

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8. SPECIAL PROVISIONS:

a. In accordance with the provisions of Paragraph (b) of § 173.22a, persons may use the packaging authorized by this exemption for the transportation of the hazardous materials specified in paragraph 6, only in conformance with the terms of this exemption.

b. A person who is not a holder of this exemption, but receives a package covered by this exemption, may reoffer it for transportation provided no modifications or changes are made to the package and it is offered for transportation in conformance with this exemption and the HMR.

c. A current copy of this exemption must be maintained at each facility where the package is offered or reoffered for transportation.

d. Each packaging manufactured under the authority of this exemption must be either (1) marked with the name of the manufacturer and location (city and state) of the facility at which it is manufactured or (2) marked with a registration symbol designated by the Office of Hazardous Materials Exemptions and Approvals for a specific manufacturing facility.

e. A current copy of this exemption must be maintained at each facility where the package is manufactured under this exemption. It must be made available to a DOT representative upon request.

9. MODES OF TRANSPORTATION AUTHORIZED: Motor vehicle.

10. MODAL REQUIREMENTS: A current copy of this exemption must be carried aboard each motor vehicle used to transport packages covered by this exemption.

11. COMPLIANCE: Failure by a person to comply with any of the following may result in suspension or revocation of this exemption and penalties prescribed by the Federal hazardous materials transportation law, 49 U.S.C. 5101 et seq:

- o All terms and conditions prescribed in this exemption and the Hazardous Materials Regulations, Parts 171-180.
- o Registration required by § 107.601 et seq., when applicable.

Each "Hazmat employee", as defined in § 171.8, who performs a function subject to this exemption must receive training on the requirements and conditions of this exemption in addition to the training required by §§ 172.700 through 172.704.

No person may use or apply this exemption, including display of its number, when this exemption has expired or is otherwise no longer in effect.

12. REPORTING REQUIREMENTS: The carrier is required to report any incident involving loss of packaging contents or packaging failure to the Associate Administrator for Hazardous Materials Safety (AAHMS) as soon as practicable. (Sections 171.15 and 171.16 apply to any activity undertaken under the authority of this exemption.) In addition, the holder(s) of this exemption must also inform the AAHMS, in writing, as soon as practicable of any incidents involving the package and shipments made under this exemption.

Issued at Washington, D.C.:



for Robert A. McGuire
Associate Administrator for
Hazardous Materials Safety

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(DATE)

Address all inquiries to: Associate Administrator for
Hazardous Materials Safety, Research and Special Programs
Administration, Department of Transportation, Washington, D.C.
20590.
Attention: DHM-31.

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The original of this exemption is on file at the above office. Photo reproductions and legible reductions of this exemption are permitted. Any alteration of this exemption is prohibited.

PO: CWFREEMAN/sdc